REMARKS

Re-examination and allowance of the above-captioned application is respectfully requested.

Initially, Applicants thank the Examiner for discussing the present application with their U.S. counsel on April 26, 2006. During the discussion, Applicants' U.S. counsel discussed distinctions between the presently claimed invention and U.S. Patent 5,727,122 to HOSODA et al. (hereinafter HOSODA). As a result of the discussion, the Examiner acknowledged that HOSODA does not anticipate the present invention.

Applicants respectfully traverse the Examiner's 35 U.S.C. §102(e) rejection of claims 21-30 as being anticipated by HOSODA, submitting that the applied reference fails to disclose at least "a waveform providing system configured to provide a fixed waveform from a memory", and "a convolution system configured to convolute said fixed waveform with said input excitation vector to generate a modified excitation vector", as recited in Applicants' claim 21.

As discussed during the interview of April 26, 2006, column 7, lines 40-45 of HOSODA discloses plural kinds of codebooks and code vectors. Those skilled in the art refer to a stochastic excitation codebook and a pulse-like excitation codebook as being fixed codebooks. Applicants submit that the Examiner is mistaken in asserting that the output of the fixed codebook corresponds to the fixed waveform of Applicants' claimed invention. Instead, Applicants pointed out to the Examiner that the output of the fixed codebook corresponds to the "input vector" of Applicants' claimed invention. Thus, Applicants submitted that HOSODA fails to anticipate the present invention, as defined

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by the claims. Upon consideration, the Examiner acknowledged the distinction between the present invention and the applied art of record.

Applicants further submit that the convolution processing performed by HOSODA involves a stochastic excitation code vector and an impulse response of a non-fixed transfer function in accordance with mathematical formula (3). See column 4, lines 36-46 of HOSODA. Applicants submit that the transfer function of equation (3) of HOSODA generates the impulse response based upon "a_{qj}", which represents a quantization result of an LPC parameter (e.g., the output of the LPC inverse quantization circuit 104), which changes with every sub-frame. The impulse response is therefore unfixed and changes dynamically with every sub-frame.

On the other hand, Applicants submit that the presently claimed invention generates a modified excitation vector based upon a convolution of a fixed waveform that is pre-stored in a memory (storage system) and an impulse response input. The utilization of the fixed waveform that is pre-stored in the memory enables a more efficient and faster excitation vector generation process.

Applicants further note that column 6, lines 35-40 of HOSODA indicates that the dynamic transfer function referenced by the convolution circuitry is not limited to the one provided by equation (3), and that a transfer function composed of a vocal tract parameter, a pitch lag, or cascading two transfer functions are equally applicable. However, Applicants submit that the vocal tract parameter and the pitch lag parameter both change every sub-frame. As a result, the impulse response derived from these transfer functions would also be unfixed and change dynamically every sub-frame.

In view of the above, Applicants submit that HOSODA fails to disclose (let alone even suggest) Applicants' convoluting of a fixed waveform with an input excitation vector to generate a modified excitation vector, or providing a fixed waveform from a memory, as specified in claims 21-30. Accordingly, the Examiner is respectfully requested to withdraw the 35 U.S.C. §102 rejection of claims 21-30, and to indicate the allowability of the pending claims over the art of record.

As noted above, during the interview, the Examiner acknowledged that the presently claimed invention is not anticipated by HOSODA. However, the Examiner referred to Fig. 10 and sub-blocks 150-154 of "relative" U.S. Patent 5,752,223 to AOYAGI et al. (incorrectly indicated on page 4 of the final Office Action as being "HOOD"), and requested that Applicants' distinguish the claimed invention from this reference.

Although Applicants note that the AOYAGI patent has not been applied by the Examiner (either individually or in combination with another reference) to reject the claims of Applicants' invention, in order to advance the prosecution of the present application to issue, Applicants provide the following discussion thereof.

Column 14, lines 35-48 of AOYAGI discusses Fig. 10, which illustrates a modified excitation circuit, in which stochastic and pulse codebooks 106 and 107 and selector 113 are combined into a single fixed codebook 150. The fixed codebook 150 contains a certain number of stochastic waveforms 152 and a certain number of impulsive waveforms 154, and is indexed by a combined index Ik. The fixed codebook 150 outputs the waveform indicated by the constant index Ik as a constant excitation signal ec.

Applicants submit that the waveform outputted from the fixed codebook 150 corresponds to the input vector of Applicants' claimed invention, and is never the fixed waveform of Applicants' invention. In this regard, it is submitted that the algebraic codebook of Applicants' invention corresponds to the fixed codebook.

Accordingly, Applicants submit that AOYAGI also fails to anticipate the present invention, as defined by the claims.

Lastly, Applicants respectfully traverse the judicially created doctrine of double patenting rejection over the claims of U.S. Patent 6,421,639 in view of HOSDA. In setting forth this rejection, the Examiner asserted that the '639 patent discloses all the features of Applicants' claimed invention, but for using the modified excitation vector in the synthesis filter in a CELP system, but that this feature is taught by HOSODA. During the above-noted interview, the Examiner indicated that upon withdrawal of the 35 U.S.C. §102 rejection, the double patenting rejection would also be withdrawn. As discussed above, Applicants submit that HOSODA fails to anticipate the instant invention, and thus, the ground for the 35 U.S.C. §102 rejection no longer exists. Thus, Applicants submit that the ground for the double patenting rejection also no longer exists, and respectfully requests its withdrawal.
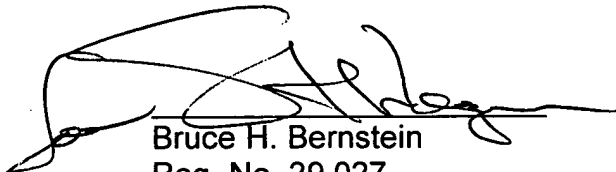
SUMMARY AND CONCLUSION

In view of the fact that none of the art of record, whether considered alone or in combination, discloses or suggests the present invention as now defined by the pending claims, and in further view of the above amendments and remarks, reconsideration of the Examiner's action and allowance of the present application are respectfully requested and are believed to be appropriate.

Should an extension of time be necessary to maintain the pendency of this application, including any extensions of time required to place the application in condition for allowance by an Examiner's Amendment, the Commissioner is hereby authorized to charge any additional fee to Deposit Account No. 19-0089.

If there should be any questions concerning this application, the Examiner is requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,
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